

Claims

1. A method for managing deposits within a pump mechanism by introducing fluid suitable for dissolving, diluting or otherwise disengaging deposits which have accumulated on the internal working surfaces of the pump, the method comprising the steps of:
  - (a) monitoring the performance of the pump;
  - (b) receiving process data from, or associated with, a tool being evacuated by the pump;
  - (c) calculating fluid flow characteristics required to compensate for the accumulation of deposits on the internal working surfaces of the pump based on the monitored performance and the process data; and
  - (d) introducing fluid into the pumping mechanism in accordance with the calculated characteristics.
2. A method according to Claim 1, wherein the fluid is a halogen
3. A method according to Claim 2, wherein the fluid is a fluorinated liquid or gas.
4. A method according to Claim 1, wherein the fluid is inert purge gas.
5. A method according to Claim 4, wherein the purge gas is delivered at an elevated pressure.
6. A method according to Claim 5, wherein the purge gas is delivered at a pressure in excess of 2000 mbar.
7. A method according to Claim 2 or Claim 3, wherein a second fluid is also introduced to the pump, this second fluid being inert purge gas.
8. A method according to Claim 7, wherein the first and second fluids are introduced at different locations in the pump.
9. A method according to Claim 8, wherein the first fluid is directed to the internal working surfaces of the pump.

10. A method according to Claim 8 or Claim 9, wherein the second fluid is directed towards sealing components of the pump.

11. A method according to Claim 7, wherein the second fluid is introduced after injection of the first fluid has terminated.

12. A method according to any preceding claim, wherein the fluid flow characteristics are at least one of the group of flow rate, temperature, pressure and duration of injection.

13. A method according to any preceding claim, wherein the fluid is introduced during normal operation of the pump.

14. A method according to Claim 13, wherein the fluid is introduced into an exhaust section of the pump.

15. A method according to any of Claims 1 to 12, wherein the fluid is introduced when the pump is off line.

16. A pump according to any preceding claim, wherein the monitoring step comprises recording at least one of the group of pressure at the exhaust of the pump and motor current

17. A pumping arrangement comprising a vacuum pump having a rotor element and a stator element, at least one fluid port, means for monitoring the performance of the pump, means for receiving process data from, or associated with, a tool being evacuated by the pump, means for calculating fluid flow characteristics required to compensate for the accumulation of deposits on the internal working surfaces of the pump based on the monitored performance and the process data, and means for introducing into the pump via said at least one port and in accordance with the calculated characteristics, fluid for acting on deposits located on the element surfaces to enable said deposits to be removed therefrom.